Hallicrafters, Inc.

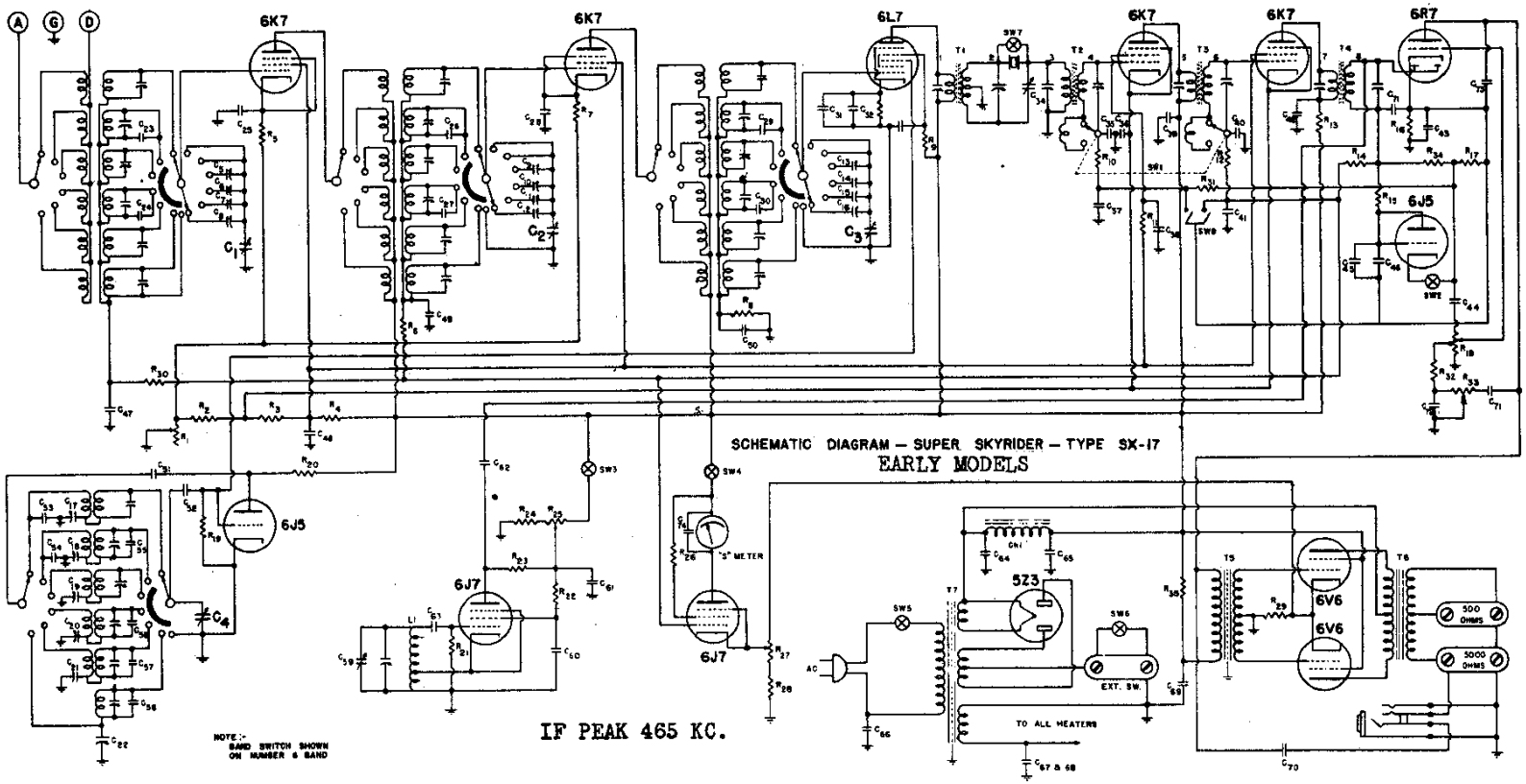
Model: SX-17, Early	Chassis:	Year: Pre October 1938
Power:	Circuit:	IF:
Tubes:		
Bands:		

Resources
Riders Volume 9 - HALLICRAFTERS 9-7
Riders Volume 9 - HALLICRAFTERS 9-8
Riders Volume 9 - HALLICRAFTERS 9-9
Riders Volume 9 - HALLICRAFTERS 9-10

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SCHEMATIC DIAGRAM — SUPER SKYRIDER — TYPE SX-17
EARLY MODELS

IF PEAK 465 KC.

This unit has been constructed on special order. In outward appearance it is identical to the SX-16 Model. The differences in the two receivers consists of a second R.F. stage and a noise silencer. These additions make the total number of tubes in the receiver 13.

FOR ALIGNMENT SEE S-17 , SX-17 LATE MODELS

CHANGES FOUND IN SOME EARLY MODELS WHICH PRECEDE THE SX-17 LATE MODELS.

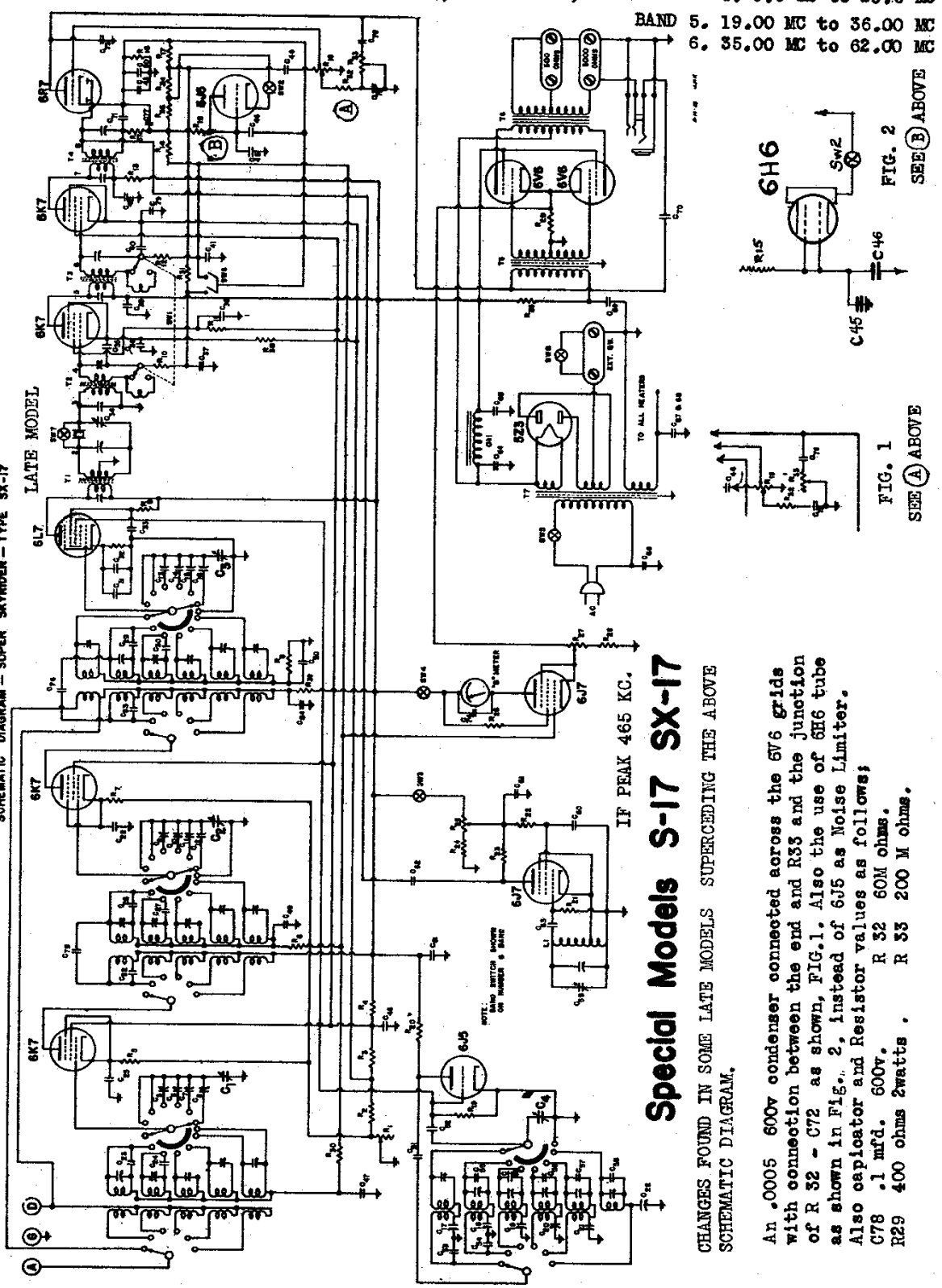
R14- 1 meg.	R17- 250 ohms.	C44-.05 mfd. 200v.
R15- 1meg.	R34- 100M ohms.	C45- .1 mfd. 200v.
R16- 950 ohms.	C43- 10 mfd. 25v.	C46-.002 mfd. mica.

NOISE SILENCER LEADS AS SHORT AS POSSIBLE FOR BEST RESULTS.

MODELS S-17, SX-17 Late Super Skyrider Schematic, Changes

HALLICRAFTERS, INC.

BAND 1. 545 KC to 1,555 KC
2. 1,545 KC to 4,300 KC
3. 4.2 MC to 10.2 MC
4. 9.8 MC to 20.5 MC
5. 19.00 MC to 36.00 MC
6. 35.00 MC to 62.00 MC



Special Models S-17 SX-17

IF PEAK 465 KC.

CHANGES FOUND IN SOME LATE MODELS SUPERCEDING THE ABOVE SCHEMATIC DIAGRAM.

An .0005 600v condenser connected across the 6V6 grids with connection between the end and R33 and the junction of R 32 - C72 as shown, FIG.1. Also the use of 6H6 tube as shown in Fig. 2, instead of 6J5 as Noise Limiter. Also capicator and Resistor values as follows;

C78 .1 mfd. 600v. R 32 60M ohms.
R29 400 ohms 2watts . R 33 200 M ohms.

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Alignment Procedure for Special Super Skyrider Models S-17, SX17

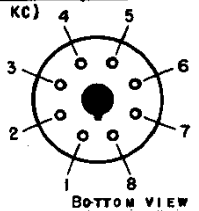
The following measurements made with 1000 ohms per volt meter and taken from the point indicated to ground. Antenna and Ground disconnected and R. F. and A. F. Gain controls set at maximum. Line voltage of 115 at the time measurements were taken. Normal tolerance allows variation of plus or minus 10% from the indicated values. "DL" means Dead Lug but will indicate voltage when used as a tie.

Tube	Function	1	2	3	4	5	6	7	8
6K7	RF Amp (1)			260	100	8	0 ON 50 OFF	6.3	8
6K7	RF Amp (2)			260	100	8	0 ON 50 OFF	6.3	8
6L7	Mixer			260	85	-13	DL	6.3	2.5
6J5G	Osc			175	DL	-13	DL	6.3	0
6K7	IF Amp (1)			260	100	11	100	6.3	10
6K7	IF Amp (2)			260	100	10	.5 ON 50 OFF	6.3	10
6R7G	2nd Det A.V.C.			175	1	1	0	6.3	-7
6V6G	1st Audio Output			300	250	0	DL	6.3	16
6V6G	Output			300	250	0	DL	6.3	16
6J7	Beat Osc.	(TUBE OUT)		250	240	0	DL 260	6.3	0
6J7G	Meter Amp			260	120	10	250	6.3	10
6J5	Silencer	(ON)		-2	-2	-2	-3.5	6.3	-2

Intermediate Frequency Alignment (465 KC)

Have the controls set in the following positions:

Noise Silencer "OFF" (switch to the left)
B.F.O. Injector "OFF"
A.F. and R.F. gain controls on full.
Selectivity switch on "SHARP" position.
Crystal phasing condenser midway (pointer straight up).
A.V.C. switch "OFF".
Crystal switch "IN".
Band switch on #1 Band - Tuning gang open.
Remove oscillator tube.
Remove 6L7 grid cap.



Bottom View of Socket

Connect Signal Generator to grid of 6L7 tube through a .1 mfd condenser. Tune signal generator to 465 KC and then adjust the following trimmers for maximum output: T-#7,8; T3-#5,6; T2-#3,4; T1-#1,2; throw crystal switch to out position and readjust trimmers #2, 3 for maximum output. When the "Selectivity" switch is snapped into the "Broad" position a slight drop in gain should be indicated. A rectifier type output meter is suggested as an output indicator.

Alignment using a 465 kc crystal

Should the receiver be a crystal model it is necessary that the crystal be used in an external oscillator in place of a signal generator such as the above. The output of this crystal-controlled oscillator is then fed to the grid of the 6L7 tube and the above procedure followed. When the I F amplifier has been aligned from the crystal oscillators output, re-inserting the crystal in the receiver will show very little difference in output whether the crystal is "IN" or "OUT" of the circuit as indicated by the crystal switch.

R. F. Alignment Procedure

On Band #1, or Broadcast, use a .0002 mfd condenser in series with the output lead from generator to receiver. On the other bands use a 400 ohm resistor. Be sure jumper from doublet post to Gnd. remains connected when aligning the receiver.
All PAD adjustments (located on the top of the chassis) are for the low frequency ends of the bands.
All TRIMMER adjustments (located on the bottom of the chassis) are for the high frequency ends of the bands.
Reduce the R.F. gain control below the point of blocking or overloading; Also be sure that the Crystal switch is in the "OUT" position as well as the A.V.C. switch in the "OFF" position.
<u>Be sure to check images</u> - Images will fall a little less than 1,000 kc lower in frequency than the fundamental or harmonic of the signal from the generator. Because of the two RF stages images will be greatly attenuated in comparison to a unit with one stage of RF.
The tuning gang must be rocked when making these adjustments.

Note#1 Harmonics of suitable frequencies may be used if the following suggested frequencies are not available.

" 2 It is necessary to repeat each pair of operations several times until no change is noted.

" 3 Great care should be exercised in aligning and accurately resonating each circuit in the Special Super Skyrider; otherwise your errors will be cumulative and the set will function poorly.

Crystal Operation

To properly adjust the crystal circuit for best performance the following procedure should be carefully followed:

Have the AVC switch in the "OFF" position. Tune in some station transmitting continuously. Be very careful to get the signal right on the nose. After you are sure that you have the signal resonated perfectly, operate the "BFO Injector" control and leave the pointer of that knob in a vertical position. You should hear a whistle, or beat note. After the BFO is on rotation of the "Pitch Control" will change the tone of the beat note. Proper operation of this control will be indicated by hearing the signal twice in one complete rotation of the knob; there being two positions at which no signal, or whistle, will be heard. These two positions are known as the "zero beat" positions.

Now snap the "Crystal" switch to the "ON" position. You will notice a reduction in noise. Carefully retune the signal using the Band Spread dial. Notice now sharply the signal peaks. Now tune through the signal and find which side of the signal is the weaker. Tune in the weaker side and then carefully adjust the "Crystal Phasing" control until the signal is inaudible. Going back to the other side of the signal should find no change in its original volume, and knife-like selectivity resulting. Use whichever side of zero-beat adjustment of the "Pitch Control", in conjunction with critical adjustment of the "Phasing Control" gives the greater rejection of the interfering signal.

Note*** The phasing control affects the sensitivity and selectivity of the receiver whether the crystal is in the circuit or not.

MODELS S-17, SX-17
Super Skyrider
Socket, Trimmers
Alignment, Parts

HALLICRAFTERS, INC.

OPR.	BAND	RECEIVER DIAL SETTING	SIGNAL GENERATOR FREQUENCY	ADJUST OSC. WITH	TRIMMERS ADJ. FOR MAX GAIN	ADJUST OSC. WITH	PADDERS ADJ. FOR MAX GAIN
1	1	600Kc	600Kc	------	---------	C22	---------
2	1	1400Kc	1400Kc	CA	Cb Cc Cd	------	---------
3	2	1800Kc	1800Kc	------	---------	C21	---------
4	2	4000Kc	4000Kc	CE	CF Cg CH	------	---------
5	3	5000Kc	5000Kc	------	----------	C19	C5 C9 C13
6	3	9000Kc	9000Kc	CI	CJ CK CL	------	----------
7	4	10,000Kc	10,000Kc	------	----------	C20	C6 C10 C14
8	4	18,000Kc	18,000Kc	CM	CN Co Cp	------	----------
9	5	20,000Kc	10,000Kc	------	---------	C18	C7 C11 C15
10	5	30,000Kc	10,000Kc	Cq	CR Cs CT	------	---------
11	6	40,000Kc	20,000Kc	------	---------	C17	C16
12	6	60,000Kc	20,000Kc	Cu	Cv	------	---------

SWITCHES
S 1 SELECTIVITY DPDT
2 NOISE SILENCER SPST
3 BFO (MOUNTED ON CONTROL)
4 "S" METER (MOUNTED ON
5 A.C. OFF AND ON (MOUNTED R.F. GAIN CONTROL)
6 SEND RECEIVE SPST ON TONE CONTROL
7 CRYSTAL SPST
8 AVC DPST

SUPER-SKYRIDER MODELS S-17, SX-17 No.	CAPACITY	TYPE	VOLTAGE	PARTS No.	No.	CAPACITY	TYPE	VOLTAGE	PARTS No
C1	420 MMFD	MAIN		48-018	62	.00025MFD	MICA		40-024
2					63	"	"		42-019
3		GANG			64	16		400	42-019
4	100 "	PAD		44-019	65	16		400	42-019
5	100 "	"			66	.01		600	45-002
6	310 "	"		44-020	67	.002	"		40-013
7	880 "	"			68	.002	"		40-013
8	1,400 "	"		44-018	69	1.		400	41-013
9	590 "	"			70	.01	"	600	45-002
10	1,000 "	"		44-017	71	.0001	"		40-003
11	350 "	"			72	.005	"	600	45-009
12	1,400 "	"		44-018	73	.0005	"		43-008
13	590 "	"			74	.005	"		40-019
14	1,000 "	"		44-017	75	10	MMFD		40-021
15	350 "	"			76	10	"		40-021
16	180 "	"		44-016	77	50	"		40-002
17	120 "	"			78	.02	MFD	600	45-010
18	1,000 "	"		44-017	79	.05	"	400	41-005
19	350 "	"			80	.1	"	400	41-007
20	180 "	"		44-016	81	.002	"		40-013
21	120 "	"			82	10	MMFD		40-021
22	10 "	MICA		40-021	83	10	"		40-021
23	10 "	"		40-021	84	.05	MFD	600	45-007
24	.002 MFD	"		40-013	85	10	MMFD		40-021
25	10 MMFD	"		40-021					
26	10 "	"							
27	.002 MFD	"		40-013					
28	10 MMFD	"		40-021					
29	10 "	"		40-021	R 1	5,000	R. F. GAIN	1/3	25-021
30	.002 MFD	"		40-021	2	500			24-040
31	.05 "	"	400	40-013	3	10,000		2.5	24-037
32	.05 "	"	600	41-005	4	10,000		2.5	24-037
33	25 MMFD	AIR		45-007	5	700		1/3	24-038
34	.05 MFD		400	48-012	6	100,000		"	20-093
35	.05 "		400	41-005	7	700		"	24-038
36	.05 "		400	41-005	8	100,000		"	20-093
37	.1 "		600	41-005	9	30,000		"	22-075
38	.25 "		600	45-008	10	100,000		1.	20-093
39	.05 "		400	45-009	11	1,000		1/3	20-033
40	.05 "		400	41-005	12	100,000		"	20-093
41	.1 "		600	41-005	13	1,000		"	20-093
42	10. "		25	45-008	14	1,000,000		"	20-108
43	.05 MFD		400	42-002	15	1,000,000		"	20-108
44	.002 "	MICA		41-005	16	950		"	22-032
45	.1 "	"	400	40-013	17	250,000		"	20-099
46	.05 "	"	400	41-007	18	1,000,000	A. F. GAIN		25-023
47	.1 "	"	600	41-005	19	50,000		1/3	20-084
48	.05 "	"	400	45-008	20	10,000		1.	20-061
49	.05 "	"	400	41-005	21	100,000		1/3	20-093
50	.05 "	"		41-005	22	100,000		"	20-093
51	.002 "	"		40-013	23	50,000		"	20-084
52	100 MMFD	"		40-007	24	50,000		"	20-084
53	50 "	"		40-002	25	500,000	BFO CONTROL		25-024
54	50 "	"		40-002	26	100,000		1/3	20-093
55	10 "	"		40-021	27	500	METER ADJ.		25-022
56	15 "	"		40-022	28	95		1/2	22-007
57	15 "	"		40-022	29	250		1.	20-099
58	25 "	"		40-024	30	100,000		1/3	20-093
59	25 "	AIR		48-012	31	1,000,000		"	20-108

No.	OHMS	WATTAGE	PARTS No.
32	20,000	"	20-072
33	1,000,000	TONE CONTROL	25-013
34	100,000	1/3	20-093
35	10,000	"	20-063
36	100,000	"	20-093
37	20,000	"	20-072
38	150	"	22-011
39	1,000	"	20-033

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